Index — Volume 6 (1992)

No 1 pp 1-56
No 2 pp 57-112
No 3 pp 113-176
No 4 pp 177-240

Article Index

Number 1

Papers

Development/Design

Distillation trays with non-circular holes: expanded metal trays
J.T. Lavin and Ini J. Urua 3-8

Separation

Effect of regneration pressure level in kinetically controlled pressure swing adsorption
N.O. Lemcoff and A.I. LaCava 9-14
Dynamics of pressurization and blowdown of an adiabatic bed: III
Z.P. Lu, J.M. Loureiro, M.D. LeVan and A.E. Rodrigues 15-23

Membranes

Gas separation membranes based on polyheteroarylenes
K.D. Petrenko, L.I. Zamulina and V.P. Privalko 25-34

Theory/Modelling

Simulation of heterogeneous surfaces of adsorbents by Monte Carlo methods
V. Mayagoitia, M.J. Cruz, F. Rojas, I. Kornhauser, G. Zgrablich and V. Pereyra 35-41
Measurements of argon, nitrogen and carbon dioxide diffusion through random assemblies of small spheres
T. Bardacki and F.G. King 43-48

Number 2

Papers

Separation

Studies of downcomer behaviour for foaming and non-foaming systems
I.J. Urua and M.C.G. del Cerro 59-69
Liquid residence time in downcomers for foaming and non-foaming systems
I.J. Urua and M.C.G. del Cerro 71-77

Membranes

A fixed-site carrier composite membrane for NH_3/N_2 separation
S.K. Shukla and K.-V. Peinemann 79-81

Development/Design

Development of a gas-cleaning system for a scrap-tire vacuum-pyrolysis plant
V. Roy, B. de Caumia and C. Roy 83-87

Theory/Modelling

Dynamics of pressurization and blowdown of an adiabatic adsorption bed: 4. Intraparticle diffusion/convection models
Z.P. Lu, J.M. Loureiro, M.D. LeVan and A.E. Rodrigues 89-100
Calculation of the hydrothermal long-term stability of zeolites in gas-desulphurization and gas-drying processes
M. Suckow, W. Lutz, J. Kornatowski, M. Rozwadowski and M. Wark 101-108

Number 3

Papers

Purification

The effects of operating conditions on COS-induced degradation of aqueous diethanolamine solutions
O.F. Dawodu and A. Meisen 115-124
Sulphur dioxide absorption into sodium sulphite solutions in a cable contactor
P. Lorent, P. Gerard and J. Vanderschuren 125-131
The Linde Solinox process: Gypsum-free flue-gas desulphurization
J. Sporer 133-140
Intermediate temperature electrochemical Claus process for sulphur recovery
A.F. Sammells, J. Patel, J. Osborne and R.L. Cook 141-147
A study of foaming problems in a CO_2 removal system
G.A. Al-Enezi, H.I. Shaban, M.S.E. Abdo and H.Al-Fadhli 149-151

Development/Design

Evolutionary thermodynamic synthesis of zeotropic distillation sequences
J. Koehler, P. Aguirre and E. Blass 153-167

Number 4

Papers

Separation

Development of an alternative technique for sampling stack gas by using zeolite 3A
J.B. Sifton, M. Eic and D.M. Ruthven 179-184
Performance of iron-incorporated A-type zeolites for O_2/N_2 separation from air by pressure swing adsorption
T. Inui, M. Shibata, W. Tanakulrungsank and T. Takeguchi 185-189
Argon production from ammonia-plant purge gas
M.J. Healy 191-196

Membranes

Modelling gas separations through alumina-based membranes
D.A. White, R. Canales and H.M.H. Abdelkareem 197-200
Separation of oxygen by using zirconia solid electrolyte membranes
D.J. Clark, R.W. Losey and J.W. Suitor 201-205

Development/Design

Mass transfer and hydraulics of packed sieve trays
G.X. Chen, K.T. Chuang, C. Chien and Y. Ye 207-213
Parallel-flow slotted sieve tray efficiency
M.J. Lockett and J.D. Augustyniak 215-219

Theory/Modelling

Gas flow patterns in packed beds: A computational fluid dynamics model for wholly packed domains
I.M. Parsons and K.E. Porter 221-227
An isotherm model for adsorption of gases and vapours on heterogeneous adsorbents
N.M. Hassan, T.K. Ghosh, A.L. Hines and S.K. Loyalka 229-234

Author Index

Abdelkareem, H.M.H. 197
Abdo, M.S.E. 149
Aguirre, P. 153
Al-Enezi, G.A. 149
Al-Fadhli, H. 149
Augustyniak, J.D. 215

Bardakci, T. 43
Blass, E. 153

Canales, R. 197
Chen, G.X. 207
Chien, C. 207
Chuang, K.T. 207
Clark, D.J. 201
Cook, R.L. 141
Cruz, M.J. 35

Dawodu, O.F. 115
de Caumia, B. 83
del Cerro, M.C.G. 59, 71

Eic, M. 179

Gerard, P. 125
Ghosh, T.K. 229

Hassan, N.M. 229
Healy, M.J. 191
Hines, A.L. 229

Inui, T. 185

King, F.G. 43
Koehler, J. 153
Kornatowski, J. 101
Kornhauser, I. 35

LaCava, A.I. 9
Lavin, J.T. 3
LeVan, M.D. 15, 89
Lemcoff, N.O. 9
Lockett, M.J. 215
Lorent, P. 125
Losey, R.W. 201
Loureiro, J.M. 15, 89
Loyalka, S.K. 229
Lu, Z.P. 15, 89
Lutz, W. 101

Mayagoitia, V. 35
Meisen, A. 115

Osborne, J. 141

Parsons, I.M. 221
Patel, J. 141
Peinemann, K.-V. 79
Pereyra, V. 35
Petrenko, K.D. 25
Porter, K.E. 221
Privalko, V.P. 25

Rodrigues, A.E. 15, 89
Rojas, F. 35

Roy, C. 83
Roy, V. 83
Rozwadowski, M. 101
Ruthven, D.M. 179

Sammells, A.F. 141
Shaban, H.I. 149
Shibata, M. 185
Shukla, S.K. 79
Sifton, J.B. 179
Sporer, J. 133
Suckow, M. 101
Suitor, J.W. 201

Takeguchi, T. 185
Tanakulrungsank, W. 185

Urua, I.J. 3, 59, 71

Vanderschuren, J. 125

Wark, M. 101
White, D.A. 197

Ye, Y. 207

Zamulina, L.I. 25
Zgrablich, G. 35

Keyword index

Adiabatic adsorption
Intraparticle convection, Pressurization 89
Adsorption
Heterogeneous surfaces, Monte Carlo simulation 35
Isotherm model, Heterogeneous adsorbents 229
Alumina
Membranes, Modelling 197
Ammonia plant
Argon, Cryogenic separation 191
Argon
Ammonia plant, Cryogenic separation 191

Blowdown
Pressurization, PSA 15

CO_2 removal
Foaming problems, Potassium carbonate 149
COS
Diethanolamine, Degradation 115
Carbon molecular sieve
PSA, Nitrogen production 9
Composite membrane
Facilitated transport, Fixed-site carrier 79
Computational fluid dynamics
Ergun equation, Gas maldistribution 221
Cryogenic separation
Argon, Ammonia plant 191

Degradation
COS, Diethanolamine 115
Diethanolamine
COS, Degradation 115
Distillation sequences
Process-design, Thermodynamics 153
Distillation trays
Expanded metals, Flow behaviour 3
Downcomer
Liquid residence time, Foaming systems 71
Downcomers
Froth behaviour, Foaming systems 59

Efficiency
Parallel-flow trays, Slotted sieve trays 215
Electrochemical Claus process
Perovskite solid electrolytes, H_2S oxidation 141
Ergun equation
Computational fluid dynamics, Gas maldistribution 221
Expanded metals
Distillation trays, Flow behaviour 3

Facilitated transport
Fixed-site carrier, Composite membrane 79
Fixed-site carrier
Facilitated transport, Composite membrane 79
Flow behaviour
Distillation trays, Expanded metals 3
Flue gas desulphurization
SO_2 absorption, Sodium sulphite 125
Flue-gas desulphurization
SO_2 removal, Solinox process 133
Foaming problems
CO_2 removal, Potassium carbonate 149
Foaming systems
Froth behaviour, Downcomers 59
Liquid residence time, Downcomer 71
Froth behaviour
Downcomers, Foaming systems 59

Gas diffusion
Randomly packed spheres, Tortuosity 43
Gas maldistribution
Computational fluid dynamics, Ergun equation 221
Gas permeability
Membranes, Polyheteroarylenes 25
Gas-cleaning
Vacuum-pyrolysis, Tires 83

H_2S oxidation
Perovskite solid electrolytes, Electrochemical Claus process 141
Heterogeneous adsorbents
Adsorption, Isotherm model 229
Heterogeneous surfaces
Adsorption, Monte Carlo simulation 35
Hydrothermal stability
Zeolites, Reaction kinetics modelling 101

Intraparticle convection
Adiabatic adsorption, Pressurization 89
Isotherm model
Adsorption, Heterogeneous adsorbents 229

Liquid residence time
Downcomer, Foaming systems 71

Membranes
Gas permeability, Polyheteroarylenes 25
Alumina, Modelling 197
Mesh packing
Packed sieve trays, Sieve tray 207
Metal ion-exchanged A-type zeolite
O_2/N_2 separation, Metal-incorporated A-type zeolite 185
Metal-incorporated A-type zeolite
O_2/N_2 separation, Metal ion-exchanged A-type zeolite 185
Modelling
Alumina, Membranes 197
Moisture removal
Stack gas, Zeolite 3A 179
Monte Carlo simulation
Heterogeneous surfaces, Adsorption 35

Nitrogen production
PSA, Carbon molecular sieve 9

O_2/N_2 separation
Metal-incorporated A-type zeolite, Metal ion-exchanged A-type zeolite 185
Oxygen separation
Zirconia, Solid electrolyte 201

PSA
Nitrogen production, Carbon molecular sieve 9
Pressurization, Blowdown 15
Packed sieve trays
Mesh packing, Sieve tray 207
Parallel-flow trays
Slotted sieve trays, Efficiency 215
Perovskite solid electrolytes
H_2S oxidation, Electrochemical Claus process 141
Polyheteroarylenes
Membranes, Gas permeability 25
Potassium carbonate
CO_2 removal, Foaming problems 149
Pressurization
Blowdown, PSA 15
Intraparticle convection, Adiabatic adsorption 89
Process design
Distillation sequences, Thermodynamics 153

Randomly packed spheres
Gas diffusion, Tortuosity 43
Reaction kinetics modelling
Zeolites, Hydrothermal stability 101

SO_2 absorption
Flue gas desulphurization, Sodium sulphite 125
SO_2 removal
Flue-gas desulphurization, Solinox process 133
Sieve tray
Packed sieve trays, Mesh packing 207
Slotted sieve trays
Parallel-flow trays, Efficiency 215
Sodium sulphite
Flue gas desulphurization, SO_2 absorption 125
Solid electrolyte
Zirconia, Oxygen separation 201
Solinox process
Flue-gas desulphurization, SO_2 removal 133
Stack gas
Moisture removal, Zeolite 3A 179

Thermodynamics
Distillation sequences, Process design 153
Tires
Gas-cleaning, Vacuum-pyrolysis 83
Tortuosity
Randomly packed spheres, Gas diffusion 43

Vacuum-pyrolysis
Gas-cleaning, Tires 83

Zeolite 3A
Stack gas, Moisture removal 179
Zeolites
Hydrothermal stability, Reaction kinetics modelling 101
Zirconia
Solid electrolyte, Oxygen separation 201

Book reviews

Future Opportunities in Catalytic and Separation Technology, edited by M. Misono, Y. Moro-oka and S. Kinura
T. Suzuki 110
Handbook of Power Technology Volume 8: Gas Fluidization by M. Pell
R.R. Rathbone 54
Handbook of Properties of Condensed Phases of Hydrogen and Oxygen edited by B.I. Verkin and T.B. Selover
B.A. Hands 110